

APPENDIX.

The Chinese and Japanese Polypodiums of the
Subgenus *Pleopeltis* in the Herbarium, Royal
Botanic Garden, Edinburgh.

BY

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THROUGH the courtesy of the authorities of the Royal Botanic Garden, Edinburgh, the writer has had an opportunity of examining the Chinese and Japanese specimens of *Polypodium* subg. *Pleopeltis*. Although the majority of them are the same as those mentioned in the foregoing paper, yet, as there are several specimens which require comment, and also many others from new localities, it is thought advisable to enumerate all the specimens examined. The excellent specimens of *P. hastatum* and of *P. Engleri* from various localities have afforded the writer the means of studying these two plants very closely. As the result, the distinguishing characters formerly held have proved to be insufficient for separation of these two species, so that *P. Engleri* has been entirely suppressed.

In this enumeration the species are arranged alphabetically. Except for a few cases, synonyms, etc., which can be found in the foregoing paper are not given, since this list is meant to be a supplement to the other. After each species which is dealt with in the foregoing contribution the corresponding number is indicated, with a view to facilitate reference.

1. *P. annuifrons*, Makino (10).

JAPAN. Prov. Mino: Yenasan (Sakurai, Aug. 1909, in hb. ips. et in hb. Yokohama Nursery Company). Prov. Shimotsuke: Chuzenji in Nikkô (Takeda, Aug. 1904). Prov. Mutsu: Towada (Faurie, n. 13,289). Prov. Ishikari in Yezo: Horonai (Faurie, no. 1273).

The specimens collected by Faurie and above referred to have been wrongly reported by Christ as *P. simplex* in Bull. Herb. Boiss. vi, p. 673 (1896).

2. *P. asterolepis*, Baker (13).

CHINA. Hupeh: Western Hupeh (Wilson, n. 2635). Yun-nan: Mengtsh (Henry, n. 9203, 10,042, 10,042A).

Wilson's specimens are very similar to those collected by Morse (n. 24) in Kiangi, and by Wilson (n. 5321) in Szechwan, and referred to on page 284 of the present paper.

3. *P. Buergerianum*, Miquel (20).

JAPAN. Prov. Satsuma (Sakurai, in hb. Yokohama Nurs. Co., Sept. 1905). Prov. Tosa (Sakurai, Aug. 1908).

4. *P. crenato-pinnatum*, Clarke (28).

CHINA. Yunnan: Mengtze (Henry, n. 9895A); Szemao (Henry, n. 10,284); vicinity of Yunnan-sen (Maire, n. 2732, 2760, 2800); flank of volcanic mountain, north-west of Teng-yueh, lat. 25° 70' N. (Forrest, n. 8390).

5. *P. drymoglossoides*, Baker (38).

CHINA. Hupeh (Henry, n. 3685; Wilson, n. 2647).

Henry's specimens are the largest examined. The sterile frond measures up to 7 cm. long, 2 cm. wide, while the fertile one reaches 12 cm. long, 8 mm. broad.

6. *P. eilophyllum*, Diels (2).

CHINA. Hupeh (Henry, n. 6859).

7. *P. ensatum*, Thunberg (18).

CHINA. Yunnan: Milê district (Henry, n. 9896).

JAPAN. Prov. Idzu: Mt. Higane (Takeda, Apr. 1906). Prov. Sagami: Mt. Ôyama (Sakurai, Aug. 1907, Aug. 1909; Bisset, n. 542); Miyanoshita in Hakone (Bisset, n. 543).

Henry's specimens from Yunnan are the co-type of *P. oligolepis*, Bak. The type specimens of *P. oligolepis* kept in Kew Herbarium possess only uniseriate sori, whereas the Edinburgh specimens have semi-biseriate to semi-triseriate sori, which character is also known to occur in *P. ensatum*, Thunb.

8. *P. excavatum*, Bory (9).

a. *concolor*, Takeda.

CHINA. Yunnan: on trunks of trees and humus-covered boulders in side valleys on the eastern flank of the Tali Range; lat. 25° 40' N.; alt. 8000-9000 ft. (Forrest, n. 4927, pro parte).

β. *discolor*, Takeda.

CHINA. Szechwan: western Szechwan (Wilson, n. 2637). Yunnan: Mengtze (Henry, n. 10,088); lava bed west of Teng-yueh, lat. 25° N. (Forrest, n. 8083).

9. *P. Fortuni*, Lowe (15).

CHINA. Hupeh (Wilson, n. 2640). Szechwan (Henry, n. 7247). Yunnan: without precise locality (Henry, n. 10,090); Mengtsz (Henry, n. 9780, 13,634). Fukien: Lung yen chou (Schindler, n. 419). Kwangtung: Thai-yong (Dalziel, Jul. 1899).

10. *P. Griffithianum*, Hooker (37).

CHINA. Szechwan (Wilson, n. 2645). Yunnan: Mengtsz (Henry, n. 10,272A).

11. *P. hastatum*, Thunberg (35).

CHINA. Szechwan (Wilson, n. 2639). Yunnan: Milê district (Henry, n. 9897); Szemao (Henry, n. 12,633; 12,633B). Shangtung: Chefoo (ex hb. Carles).

FORMOSA. (ex hb. Carles).

JAPAN. Prov. Tosa (ex hb. Yokohama Nurs. Co.). Prov. Sagami: Yenoshima (Sakurai, Sept. 1910); Yokohama (Bisset, n. 3593; Faurie, n. 540); Misaki (ex hb. Yokohama Nurs. Co., Sept. 1909). Prov. Shimotsuke: Nikkô (Bisset, n. 1261, 1937, 1938, 3593).

A careful study of ripe spores has convinced the writer that they are usually echinate, but occasionally quite smooth or very little echinate, so that the sole distinguishing character of *P. Engleri* from the simple form of *P. hastatum* is not at all satisfactory. Henry's specimen (n. 9897) from Milê district has the exact appearance of *P. Engleri* delineated by Makino,* but possesses echinate spores, whereas some specimens from Japan of the typical *P. hastatum* have hardly echinate or perfectly smooth spores; in some cases two kinds of spores have been found from one and the same sorus. It is difficult to regard *P. Engleri* even as a variety of *P. hastatum*, so I propose to suppress the former altogether.

Nakai † distinguishes these two plants by means of length of the stipe, which is in *P. Engleri* more than 10 cm., and in the other less. This method is, however, altogether impracticable.

12. *P. hemionitideum*, Wallich.

CHINA. Kwangtung: Thai-yong (Dalziel, 1898, 1901).

* Phan. Pterid. Japon. Icon. Illust. tab. xxviii.

† Tôkyô Bot. Mag. xxviii, p. 93 (1914).

13. *P. hymenodes*, Kunze (17).a. *sparsisorum*, Takeda.

CHINA. Szechwan (Wilson, n. 2633). Yunnan: hills south of Tengyueh, lat. 25° N., alt. 7000 ft. (Forrest, n. 9453); Mengtsh (Henry, n. 9265B).

β. *marginale*, Takeda.

CHINA. Yunnan: Mengtsh (Henry, n. 9265, 9265A).

14. *P. lineare*, Thunberg (1).a. *Thunbergianum*, Takeda.

CHINA. Yunnan: Milê district (Henry, n. 9893); eastern flank of Tali Range (Forrest, n. 4927 partim); Szemao (Henry, n. 10,062); Mengtsh (Henry, n. 10,087A). Kwangtung: Taiyong (Dalziel, Jul. 1901). Kiangsu: Shanghai (Carles, Oct. 1881).

JAPAN. Prov. Ōmi: Maebara (Faurie, n. 11,278). Prov. Idzu (Faurie, n. 15,500, 15,508). Prov. Musashi: Tōkyō (ex hb. Yokohama Nurs. Co., Aug. 1907); Ikegami (Sakurai, Aug. 1909). Prov. Sagami: Yokohama (Bisset, n. 539); Yokosuka (Bisset, n. 1939, 1940). Prov. Iyo: Matsuyama (Faurie, n. 11,633). Prov. Hitachi: Mt. Tsukuba (ex hb. Yokohama Nurs. Co., Aug. 1908). Prov. Shimotsuke: Nikkō (Mochizuki, Sept. 1910). Prov. Rikuzen: Kesenuma (Faurie, n. 6085). Prov. Ugo: Akita (Faurie, n. 2216).

Forma *caudato-attenuatum*, Takeda.

Syn.:—*P. lineare* var. *caudatum*, Nakai, in Tōkyō Bot. Mag. xxviii, p. 97 (1914), non Makino.

JAPAN. Prov. Sagami: Kamakura (Faurie, n. 1893, partim?). Prov. Musashi: Ikegami (Sakurai, Aug. 1909).

Nakai (l.c. p. 96) distinguishes a form with a branched frond as var. *ramifrons*. This is, however, merely an extreme form of a monstrosity not uncommon amongst ferns.

β. *subspathulata*, Takeda.

CHINA. Fukien: Foochow (Carles, Apr. 1881).

JAPAN. Without locality (hb. N. Fraser; Bisset, n. 1260, 4558, part.). Prov. Musashi: Tōkyō (ex hb. Yokohama Nurs. Co., Sept. 1907); Ōmiya (Sakurai, Aug. 1909).

γ. *ussuriense*, C. Chr.

JAPAN. Prov. Sagami: Mt. Kintoki in Hakone (Bisset, n. 526). Prov. Hitachi: Mt. Tsukuba (Sakurai, Aug. 1910). Prov. Shimotsuke: Nikkō (Bisset, n. 1259, 1262; Takeda, Sept. 1904).

♂. *loriforme*, Takeda.

CHINA. Szechwan (Wilson, n. 2634).

Forma *steniste*, Takeda.

CHINA. Hupeh (Henry, n. 5654; Wilson, n. 2642).

15. *P. membranaceum*, Don.

CHINA. Yunnan: vicinity of Yunnan-sen (Maire, n. 2353, 2833); flank of volcanic mountain to north-west of Tengyueh, lat. 25° 10' N., alt. 7000 ft. (Forrest, n. 8464); Szemao (Henry, n. 9469D, 11,488C); south of Red River from Manmei, 6000 ft. (Henry, n. 9469); Mengtze (Henry, n. 9469A).

16. *P. normale*, Don (16).

a. *latifrons*, Hook.

CHINA. Yunnan: Mengtze (Henry, n. 10,090).

17. *P. oblongisorum*, Christensen (4).

CHINA. Yunnan: south of Red River from Manmei (Henry, n. 9194).

18. *P. ovatum*, Wallich (19).

CHINA. Hupeh (Henry, n. 3123, 7879). Szechwan (Henry, n. 7133). Yunnan: Fei chen lin Mt. forest, 6800 ft. (Henry, n. 10,078C); Mengtze (Henry, n. 9774; 10,078A).

19. *P. oxylebum*, Wallich (32).

CHINA. Yunnan: south of Red River from Manmei, 6000 ft. (Henry, n. 10,080); Mengtze (Henry, 10,080A); Szemao (Henry, n. 10,080B, 13,074, 13,074A).

20. *P. Phymatodes*, Linnaeus.

CHINA. Without locality (Harland, n. 34). Kwantung: Thai-yong (Dalziel, Sept. 1899, July 1901).

FORMOSA. Lambay Isle (Henry, n. 1133).

21. *P. pteropus*, Blume (24).

CHINA. "Prope Hongkong in aqua leviter fluente super rupes crescentem" (Hance, n. 1051).

22. *P. Steerei*, Harrington (23).

FORMOSA. Takow (Henry, sin. num.).

23. *P. Stewartii*, Clarke (30).

CHINA. Hupeh (Henry, n. 6170A, pro parte).

24. *P. subhastatum*, Baker (21).*β. longifrons*, Takeda.

JAPAN. Prov. Idzu: Mt. Higanesan (Takeda, Apr. 1906, Sakurai, Nov. 1910, Sept. 1907).

25. *P. subimmersum*, Baker (5).

CHINA. Yunnan: Mengtsz (Henry, n. 11,826).

26. *P. sublineare*, Baker (6).

CHINA. Yunnan: south of Red River from Manmei (Henry, n. 9062A); Feng chen lin Mts. (Henry, 11,827).

27. *P. subrostratum*, Christensen.

CHINA. Yunnan: Mengtsz (Henry, n. 13,302).

28. *P. superficiale*, Blume (22).

CHINA. Yunnan: Mengtsz (Henry, n. 9264).

29. *P. triglossum*, Baker (25).

CHINA. Yunnan: Milê Mountain forest (Henry, n. 9953).

30. *P. trisectum*, Baker (26).

CHINA. Yunnan: vicinity of Yun-nan-sen (Maire, n. 2731, 2831; Milê district (Henry, n. 9891); Szemao (Henry, n. 9891A, 13,121, 13,121A, 13,121B).

31. *P. Veitchii*, Baker (27).

CHINA. Hupeh (Henry, n. 6170A, pro parte, 6170B). Szechwan (Wilson, n. 2644).

JAPAN. Prov. Kai: Mt. Komagatake (Sakurai, Aug. 1910). Prov. Shimotsuke: Nikkô (Coll. ?, 23rd Aug. 1887).

32. *P. Wallichianum*, Spring.

CHINA. Yunnan: Mengtsz (Henry, n. 10,079, 10,079A, 11,514).

The foregoing enumeration of the species of the subgenus *Pleopeltis* in the Herbarium of the Royal Botanic Garden, Edinburgh, necessitates a short supplement to the Index on pages 303-5. Five additional species have to be noted.

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As the species in this Appendix are arranged in alphabetical order, there is no need for a detailed index.